

## Digital Data for Type Design

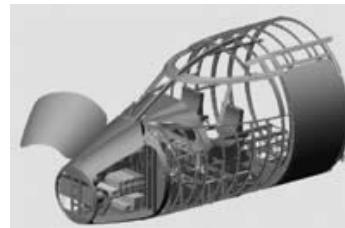
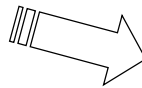
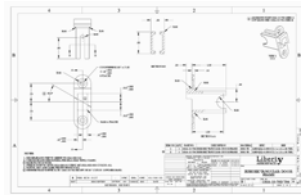
### *Acceptance of Digital Product Definition Data for Type Design*

Presented At FAA Denver ACO  
2004 DER Recurrent Seminar

by  
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### *Acceptance of Digital Product Definition Data for Type Design*

- The evolution of CAD/CAM
  - Ink on Mylar to Automated Drafting (CADAM)



-3D Wireframe Modeling & 2D Dwgs

-3D Solid Modeling w/o Dwgs

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## Digital Data for Type Design

### *Acceptance of Digital Product Definition Data for Type Design*

- What is 3D Digital Product Definition?
  - A virtual 3D model of the part/assembly
    - Exact representation of all geometric features
    - Attributes for materials, processes, notes
    - GD&T for critical features
    - No 2D orthographic projection drawings
  - All the information necessary to define the configuration of the product!

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### *Acceptance of Digital Product Definition Data for Type Design*

- What is allowed for Type Design Data
  - §21.31 Type Design Consists of:
    - (a) Drawings and specifications necessary to define the configuration and the design features of the product
    - (b) Information on dimensions, materials, and processes necessary to define the structural strength of the product
  - 3D Digital Product Definition can meet the requirements for Type Design Data!

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## Digital Data for Type Design

### *Acceptance of Digital Product Definition Data for Type Design*

- Why should the FAA accept Type Design Data in a 3D Digital Product Definition format?
  - Reduces cost for applicant
  - Improves efficiency of design review
  - Promoted by Chapter 35 of Title 44 of the US Federal Code

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### *Acceptance of Digital Product Definition Data for Type Design*

- What is required BEFORE proceeding?
  - Policies and procedures must be in place to ensure the integrity of the type design data.
  - Mutually agreed to methods for reviewing design data in an electronic format.
  - Process verification of the entire design to manufacturing CAD/CAM process.

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## Digital Data for Type Design

### *Acceptance of Digital Product Definition Data for Type Design*

- Applicant Procedures
  - Responsibilities
  - Configuration Management
  - Traceability
  - Media Security
  - Data Exchange
  - Process Verification
  - Problem Reporting
  - Data Retention

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### *Acceptance of Digital Product Definition Data for Type Design*

- FAA Procedures
  - Approval of applicants Engineering Procedures Manual
  - Manufacturing Oversight
  - Review of Type Design Data

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## Digital Data for Type Design

### *Acceptance of Digital Product Definition Data for Type Design*

- Conclusion
  - Acceptance of 3D Digital Product Data
    - Reduces cost
    - Improves understanding of design
  - Policies and procedures must be in place
  - Viewer technology is available to support the FAA mission

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